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United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS—CIRCULAR 93.

A. C. TRUE, Director.

ORGANIZATION, WORK, AND PUBLICATIONS OF THE AGRICULTURAL EDUCATION SERVICE.

[Corrected to December 1, 1909.]

The Office of Experiment Stations is the general agency of the Department of Agriculture to deal with the various colleges, schools, and extension departments in the United States concerning matters relating to the promotion of agricultural education. Authority for the educational work of the Office is based on the provision of the act of August 30, 1890 (Morrill Act), that "an annual report by the president of each of said colleges [founded under the land-grant act of 1862 for the establishment of agricultural colleges] shall be made to the Secretary of Agriculture, as well as to the Secretary of the Interior, regarding the condition and progress of each college, including statistical information in relation to its receipts and expenditures, its library, the number of its students and professors * * *, and on acts making appropriations for the Department of Agriculture, in which the Secretary of Agriculture is authorized "to investigate and report upon the organization and progress of farmers' institutes and agricultural schools in the several States and Territories, and upon similar organizations in foreign countries, with special suggestions of plans and methods for making such organizations more effective for the dissemination of the results of the work of the Department of Agriculture and the agricultural experiment stations, and of improved methods of agricultural practice."

The general field of agricultural education as covered by the Office is now divided for practical purposes into: (1) The interior educational work of agricultural colleges and schools, and (2) farmers' institutes and other forms of educational extension work in agriculture.

AGRICULTURAL COLLEGES AND SCHOOLS.

STAFF.

D. J. CROSBY, Specialist in Agricultural Education.

F. W. HOWE, Assistant in Agricultural Education.

SCOPE OF WORK.

In its relations with agricultural colleges and schools the Office (1) collects and publishes information regarding the progress of agricultural education at home and abroad; (2) visits and studies different grades of American and foreign schools in which agriculture is taught; (3) cooperates with the Association of American Agricultural Colleges and Experiment Stations in conducting the Graduate School of Agriculture and in formulating courses of study for colleges, normal schools, special agricultural schools, and public secondary and elementary schools; and (4) aids agricultural colleges and schools, state and local school authorities, and national and state associations of educators along lines of agricultural education.

PUBLICATIONS OF THE OFFICE ON COLLEGIATE, SECONDARY, AND ELEMENTARY AGRICULTURE.

FOR GRATUITOUS DISTRIBUTION.

[Requests for these publications should be sent to the Secretary of Agriculture or to a Senator or Representative in Congress.]

Full sets of the publications enumerated below can not be furnished, as the Department's supply is restricted by the appropriation for printing. Application should be made only for the particular publication desired. The publications will be supplied as long as they are available. When the supply is exhausted, applicants will be referred to the Superintendent of Documents, Government Printing Office, who has the publications for sale under the provisions of the act of January 12, 1895.

CIRCULARS.

Circular No. 27.—Statistics of Agricultural Colleges and Experiment Stations. 1894. Pp. 18.

Contains statistics compiled from official reports of the agricultural colleges and experiment stations in the United States.

Circular No. 49.—Secondary Courses in Agriculture [Seventh Report of the Committee on Methods of Teaching Agriculture]. Pp. 10.

The topics treated in this report are secondary agricultural education in connection with colleges and in town high schools. In connection with the latter a number of high-school courses are given with suggested changes adapting them to the introduction of instruction in agriculture.

Circular No. 60.—The Teaching of Agriculture in the Rural Common Schools [Ninth Report of the Committee on Methods of Teaching Agriculture]. Pp. 20.

This report discusses the development of industrial training in the common schools, the movement to introduce agriculture into the rural schools, obstacles to this movement, and the object of teaching agriculture, and outlines work in nature study and elementary agriculture suitable for the common schools.

Circular No. 68 (revised).—Federal Legislation, Regulations, and Rulings Affecting Agricultural Colleges and Experiment Stations. Pp. 21.

Circular No. 69.—A Four Years' College Course in Agriculture. Pp. 36.

A summary of the reports on college courses in agriculture (Nos. 1-5 and 8) of the Committee on Methods of Teaching Agriculture of the Association of American Agricultural Colleges and Experiment Stations.

Circular No. 73.—Country Life Education. By W. M. Hays. Pp. 13.

This is an address by W. M. Hays, Assistant Secretary of Agriculture, before the Pennsylvania State Board of Agriculture, January 23, 1907, in which are discussed some of the problems of country life education and the relation of the General Government to this movement.

Circular No. 77.—A Secondary Course in Agronomy [Eleventh Report of the Committee on Instruction in Agriculture]. Pp. 43.

This report contains a syllabus on agronomy for secondary instruction, a detailed outline for the study of wheat, instructions to teachers for the use of the circular, and a series of 113 lectures, recitations, demonstrations, and laboratory exercises on phases of agronomy, concerning which there is now available suitable material for use in the recitation and the practicum.

Circular No. 83.—The American System of Agricultural Education. By A. C. True and Dick J. Crosby. Pp. 27.

A semipopular explanation of the leading features of American agricultural education in elementary, secondary, collegiate, and graduate courses, with a description of the typical institutions and agencies for conducting them. The educational functions of the Department of Agriculture, as exercised through the Office of Experiment Stations, are particularly explained.

Circular No. 90.—Normal School Instruction in Agriculture. By M. J. Abbey. Pp. 31.

In this circular a description is given of the agricultural course in the Mayville (North Dakota) State Normal School, including a discussion of the place of agriculture in the normal school curriculum, methods of teaching, correlation, and other related questions.

Circular No. 91.—Secondary Education in Agriculture in the United States. By A. C. True. Pp. 11.

A brief review of the status of secondary education in agriculture in the United States is given, together with a discussion of the desirable relationships between secondary and collegiate education in agriculture, and outlines of two-year and four-year agricultural and horticultural courses, showing the time given not only to agriculture and horticulture but also to other natural sciences, languages, history, and mathematics.

SEPARATES—MISCELLANEOUS.

Some Problems of the Rural Common School. By A. C. True. Pp. 133-144, pl. 1, figs. 4. Reprinted from Yearbook of Department of Agriculture for 1901.

Discusses some of the weaknesses of the rural common schools and ways of overcoming them, including centralization of schools, transportation of pupils, the introduction of studies more closely related to the practical business of the farm, securing teachers in sympathy with farm life, making the schools the center of intellectual life of the community, and the cooperation of the farmer and his family with the teacher and pupils.

Progress in Secondary Education in Agriculture. By A. C. True. Pp. 481-500, pls. 2. Reprinted from Yearbook of Department of Agriculture for 1902.

This paper gives a review of the progress that is being made in secondary education in agriculture in the United States and makes suggestions for courses in agriculture in the public high schools.

Boys' Agricultural Clubs. By Dick J. Crosby. Pp. 489-496, pls. 3.
Reprinted from Yearbook of Department of Agriculture for 1904.

This paper includes a description of the boys' exhibit of corn at the Louisiana Purchase Exposition, the development of boys' clubs in Illinois and other States, and school fairs; and discusses the educational value of the work done by such organizations. It is to be superseded by Farmers' Bulletin 385.

Statistics of Land-grant Colleges and Agricultural Experiment Stations, 1904-1908. By Marie T. Spethmann. Reprinted from Annual Reports of Office of Experiment Stations for 1904, 1905-1908.

Contains statistics compiled from official reports of the agricultural colleges and experiment stations in the United States.

Progress in Agricultural Education, 1904. By A. C. True. Pp. 575-616, pls. 5, figs. 6. Reprinted from Annual Report of Office of Experiment Stations for 1904.

A review is given of the work of the year in agricultural education by the Department of Agriculture in relation to both American and foreign institutions, by the Association of American Agricultural Colleges and Experiment Stations, the agricultural colleges, the secondary schools, and the primary schools.

County Schools of Agriculture in Wisconsin. By K. C. Davis. Pp. 677-686, pls. 4. Reprinted from Annual Report of Office of Experiment Stations for 1904.

This paper describes the equipment of these schools, the character of the instruction, methods of instruction and facilities, and the attitude of the students and the public toward them.

The Use of Illustrative Material in Teaching Agriculture in Rural Schools. By Dick J. Crosby. Pp. 257-274, pls. 3, figs. 10. Reprinted from Yearbook of Department of Agriculture for 1905.

In this article the author discusses the value of agriculture in rural schools, describes methods employed in teaching this subject in a consolidated school in Tennessee, in a village high school in Pennsylvania, and in a county high school in Kansas, describes eight exercises which can be performed with simple and inexpensive apparatus, and discusses agriculture as an aid to other school work.

Progress in Agricultural Education, 1905. By A. C. True. Pp. 303-357, pls. 5. Reprinted from Annual Report of Office of Experiment Stations for 1905.

A review is given of the educational work of this Department in its relation to both American and foreign educational institutions, including brief accounts of the Second International Congress of Agricultural Education and the First International Congress of Agricultural Mechanics, both held at Liège, Belgium, in 1905. Attention is also given to the educational work in 1905 of the Association of American Agricultural Colleges and Experiment Stations, the progress along agricultural lines made by the agricultural colleges and by secondary and primary schools. The article also contains a course of study for rural schools, prepared by Prof. W. M. Hays, which provides an articulated scheme for the consolidated rural school, the agricultural high school, and the agricultural college.

Courses in Agriculture, Horticulture, and Allied Subjects. By F. W. Rane. Pp. 77-89. Reprinted from Office of Experiment Stations Bulletin 164.

Embodies the report of a special committee appointed by the section of horticulture and botany of the Association of American Agricultural Colleges and Experiment Stations to outline courses in horticulture.

Progress in Agricultural Education, 1906. By Dick J. Crosby. Pp. 213-300, pls. 3, fig. 1. Reprinted from Annual Report of Office of Experiment Stations for 1906.

A review of the leading features of progress in agricultural education in this country and abroad. An account is given of the second session of the Graduate

School of Agriculture at the University of Illinois and of the development of secondary schools of agriculture in Maryland and Georgia. A course in agriculture for the Georgia schools is given in considerable detail, as is also a suggestive course for the elementary public schools of California.

Training Courses for Teachers of Agriculture. By Dick J. Crosby. Pp. 207-220. Reprinted from Yearbook of Department of Agriculture for 1907.

Results of an inquiry conducted by the Office of Experiment Stations concerning courses for teachers of agriculture in agricultural colleges, state normal schools, privately endowed colleges and schools, and county normal training schools in the United States. These are followed by a discussion of the essentials of training for teachers of agriculture and lines of future development in this work.

Progress in Agricultural Education, 1907. By Dick J. Crosby. Pp. 237-306, figs. 18. Reprinted from Annual Report of Office of Experiment Stations for 1907.

A review is given of the work of the different educational agencies for the promotion of agriculture in this country and abroad, with special attention to the fiftieth anniversary of the establishment of the first agricultural college in this country; the training of teachers in agricultural colleges and normal schools, and descriptions of the agricultural features of instruction in a number of high schools.

Progress in Agricultural Education, 1908. By Dick J. Crosby. Pp. 231-288, pls. 5. Reprinted from Annual Report of Office of Experiment Stations for 1908.

A summary is given of the progress in agricultural education during the past eleven years, together with the annual review of the educational work of the several agricultural agencies in this country and abroad, with special reference to the reorganization of college courses, the training of teachers, college extension and short courses, and the development of agriculture in high schools and elementary schools.

Description of Exhibit of Colleges of Agriculture and Mechanic Arts and Experiment Stations, Louisiana Purchase Exposition, St. Louis, Mo., 1904. By W. H. Beal. Doc. No. 710. Pp. 23, pl. 1.

A pamphlet prepared for distribution at the Louisiana Purchase Exposition.

Institutions in the United States Giving Instruction in Agriculture. Doc. 1110. Pp. 9.

A list of these institutions classified according to grades of instruction in agriculture.

BULLETINS FOR SALE OR FOR GRATUITOUS DISTRIBUTION.

[The publications marked with an asterisk (*) can not be furnished from this Office but may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., by payment of the price given; postage stamps and personal checks are not accepted. The bulletins not marked with the asterisk will be furnished free, so long as they are available, to libraries, educational institutions, the press, State and foreign officials connected with agriculture, exchanges, and such persons as are in active cooperation with the Department or render tangible service in its work. Other persons can obtain them by purchase from the Superintendent of Documents.]

Miscellaneous Bulletins Nos. 1 and 2*.—Proceedings of the Annual Convention of the Association of American Agricultural Colleges and Experiment Stations. 1889. Price 10 cents each.

Minutes and papers of the second annual meeting of the association.

Bulletins Nos. 1*, 5*, 19*, 23, 27, 39, 47, 59, 74, 88, 111*, 122, 137, 151, 161, 176, 197, 206, and 224.—Organization Lists of the Agricultural Colleges and Experiment Stations in the United States. 1889-1890, 1894-1909. Prices Buls. 1, 5, 19, 23, 27, 39, 122, 137, 151, 161, 5 cents each; 47, 59, 74, 88, 111, 10 cents each; 176, 197, 206, 224, 15 cents each.

These contain lists of the agricultural colleges and experiment stations in the United States, together with their governing boards, administrative officers, instructors, and investigators; also the officers of the Association of American Agricultural

tural Colleges and Experiment Stations, the Association of Official Agricultural Chemists of the United States, the Association of Economic Entomologists, the American Association of Farmers' Institute Workers, and the Association for Horticultural Science, and brief statements regarding courses of study in the agricultural colleges.

Bulletins Nos. 7*, 16, 20, 24, 30, 41, 49*, 65, 76*, 99, 115*, 123*, 142, 153*, 164, 184*, 196, and 212*.—Proceedings of the Annual Convention of the Association of American Agricultural Colleges and Experiment Stations. 1891–1908. Prices Buls. 20, 24, 5 cents each; 7, 16, 30, 41, 49, 65, 76, 115, 123, 142, 153, 164, 10 cents each; 99, 196, 212, 15 cents each; 184, 20 cents.

Minutes and papers of the annual meetings of the association.

Bulletins Nos. 51, 64, 78, 97, 114, and 128.—Statistics of the Land-grant Colleges and Agricultural Experiment Stations in the United States for the Years Ended June 30, 1897–1902, Inclusive. Price 5 cents each.

Contain statistics compiled from official reports of the agricultural colleges and agricultural experiment stations in the United States.

* Bulletin No. 72.—Farmers' Reading Courses. By L. H. Bailey. Pp. 36. 1899. Price 5 cents.

This bulletin treats of the historical development of these courses in America. Outlines of the reading courses as conducted by agricultural colleges in Ontario, Pennsylvania, Michigan, New Hampshire, Connecticut, New York, West Virginia, and South Dakota are given, with lists of the books used and mention of ventures along the same lines in other States.

Bulletin No. 127.—Instruction in Agronomy at Some Agricultural Colleges. By A. C. True and Dick J. Crosby. Pp. 86, pls. 17, figs. 22. 1903. Price 20 cents.

This bulletin contains a brief review of the work of the committee on methods of teaching agriculture of the Association of American Agricultural Colleges and Experiment Stations, with extracts from the reports of that committee, and detailed descriptions of courses in agronomy in the agricultural colleges in Alabama, Illinois, Michigan, Nebraska, and Ohio, and the Agricultural Institute of the University of Göttingen, Germany.

Bulletin No. 139.—Special and Short Courses in Agricultural Colleges. By Dick J. Crosby. Pp. 59. 1903. Price 5 cents.

This is a summary of information on the special and short courses in agriculture and related subjects offered at the land-grant colleges. Brief statements are made concerning the date of opening, length, nature, admission requirements, and cost of attending these courses.

Bulletin No. 160.—School Gardens. By B. T. Galloway. Pp. 47, pls. 5. 1905. Price 10 cents.

This is a report upon some cooperative work with the normal schools of Washington, with notes on school-garden methods followed in other American cities.

Bulletin No. 186.—Exercises in Elementary Agriculture—Plant Production. By Dick J. Crosby. Pp. 64, figs. 40. 1907. Price 10 cents.

A series of exercises showing what may be done with inexpensive apparatus in teaching elementary agriculture in the better grade of common schools. It is intended as a laboratory aid for the teacher, and it presents a series of 54 progressive exercises in plant production, a series of brief elementary lessons on corn, and a list of textbooks and works of reference suitable for the common-school library.

Bulletin No. 195.—Simple Exercises Illustrating Some Applications of Chemistry to Agriculture. By K. L. Hatch. Pp. 22, figs. 5. Price 5 cents.

This bulletin contains 26 exercises intended to illustrate in a very simple way those elements and compounds called plant foods which are essential to the growth

and development of the plant, compounds formed by the plant out of the food which it consumes, the sources of plant food, and the meaning and importance of acids and alkalis.

Bulletin No. 204.—School Gardening and Nature Study in English Rural Schools and in London. By Susan B. Sipe. Pp. 37, figs. 15. Price 10 cents.

This is a report upon some investigations of methods of teaching nature study and school gardening in England.

Bulletin No. 220.—Secondary Agricultural Education in Alabama. By C. J. Owens. Pp. 30, pls. 8. Price 10 cents.

In this bulletin the author gives a statement of the origin of the district agricultural schools in Alabama, and a description of their courses and equipment at the present time.

PUBLICATIONS NO LONGER AVAILABLE.

[These publications have been sent to about 300 libraries in the United States.]

FARMERS' BULLETINS.

Farmers' Bulletin No. 109.—Farmers' Reading Courses. By L. H. Bailey. Pp. 20.

Treats of the origin and purpose of farmers' reading courses; their development in Pennsylvania, Michigan, New Hampshire, Connecticut, New York, West Virginia, and South Dakota; and the publications on agriculture used or recommended in farmers' reading courses.

CIRCULARS.

Circular No. 31.—Some Books on Agricultural Science. By A. C. True. Pp. 176.

This gives a list of about 1,500 books published from 1893 to 1896 in this and other countries.

Circular No. 32 (revised).—Report of the Committee on Methods of Teaching Agriculture [First Report]. Pp. 20.

This report discusses the need of uniformity in the study of agriculture and of definite nomenclature. It also includes a paper on Some Features of European Institutions for Agricultural Education, by A. C. True; Notes on Agricultural Education in the Scandinavian Countries, by F. W. Woll; and courses of study in the Technical High School at Munich, Germany, the Agricultural Institute at Gembloux, Belgium, and the National School of Agriculture at Grignon, France.

Circular No. 35.—Statistics of Agricultural Colleges and Experiment Stations. 1896. Pp. 18.

Contains statistics compiled from official reports of the agricultural colleges and experiment stations in the United States.

Circular No. 37 (revised).—Second Report of the Committee on Methods of Teaching Agriculture. Pp. 4.

This report suggests additional subjects to be included in the four-year course in agriculture leading to the degree of bachelor of science and the number of hours to be devoted to each, with a synopsis of the suggested course in agriculture, and statements showing in a general way the equipment required in connection with this course.

Circular No. 38.—Some Books on Agriculture and Sciences Related to Agriculture, Published 1896–1898. Pp. 45.

A bibliographical list of more than 450 publications.

Circular No. 39.—Third Report of the Committee on Methods of Teaching Agriculture. Pp. 7.

This report gives a syllabus for a course of instruction in agronomy.

Circular No. 41.—Fourth Report of the Committee on Methods of Teaching Agriculture. Pp. 7.

A syllabus for a course of instruction in zootechny.

Circular No. 42.—A German Common School with a Garden. By C. B. Smith. Pp. 7.

This includes a discussion on the educational features of school gardens in Germany, a description of a garden in connection with the school at Alfter, in the German Rhine Province, and outlines suggestions for this work as furnished by the provincial government.

Circular No. 45.—Fifth Report of the Committee on Methods of Teaching Agriculture. Pp. 8.

This report contains syllabi of courses in agrotechny, rural engineering, and rural economics.

Circular No. 52 (revised).—A Few Good Books and Bulletins on Nature Study, School Gardening, and Elementary Agriculture for Common Schools. By Dick J. Crosby. Pp. 8.

Abridged list of books suitable for teachers beginning nature-study work, for teachers' and pupils' supplementary reading, for instruction in elementary agriculture, and for reference purposes.

Circular No. 53.—Report of the Committee on Rural Engineering of the Association of American Agricultural Colleges and Experiment Stations. Pp. 10.

This report reviews the status of instruction and research in rural engineering in this country at the close of 1903 and gives suggestions for extending this work.

Circular No. 54.—Report of Committee on Indexing Agricultural Literature. By A. C. True et al. Pp. 2.

Reviews the work of the Library of this Department in preparing and printing index cards for the Department publications.

Circular No. 55.—The Relation of Natural Sciences to Agriculture in a Four-year College Course [Eighth Report of the Committee on Methods of Teaching Agriculture]. Pp. 15.

This report contains the recommendations of the committee with reference to the time to be devoted to work in physics, chemistry, botany, geology, physiology, and zoology in a four-year college course.

Circulars Nos. 61 and 64.—Statistics of Land-grant Colleges and Agricultural Experiment Stations, 1904 and 1905. By Marie T. Spethmann.

Abridgments of the statistics of the agricultural colleges and experiment stations in the United States published in full in the Annual Reports of the Office of Experiment Stations for 1904 and 1905.

Circular No. 84.—Education for Country Life. By W. M. Hays. Pp. 40, figs. 13.

This circular embodies suggestions for a systematic articulation of the work of agricultural schools of all grades with each other and with the existing system of public schools in Minnesota and other States, and gives special attention to the question of consolidation of rural schools. Price, 5 cents.

SEPARATES—MISCELLANEOUS.

Education and Research in Agriculture in the United States. By A. C. True. Pp. 81–116. Reprinted from Yearbook of Department of Agriculture for 1894.

This paper gives the origin and development of agricultural institutions in the United States, including the first plans for agricultural education, and an account of the status of agricultural education and investigation in the United States in 1894.

Agricultural Education and Research in Belgium. By A. C. True. Pp. 361-370. Reprinted from Yearbook of Department of Agriculture for 1896.

This article compares the European and American methods of promoting education, describes the organization of agricultural education in Belgium and the experiment station at Gembloux, and gives a comparative view of agricultural education in the United States.

Popular Education for the Farmer in the United States. By A. C. True. Pp. 279-290, pl. 1. Reprinted from Yearbook of the Department of Agriculture for 1897.

This is a discussion of the agencies for the popular education of farmers in the United States, including publications of this Department and of the experiment stations, farmers' institutes, short and special courses in agriculture, home reading in agriculture, nature study, various forms of extension work, and high-school courses in agriculture.

Some Types of American Agricultural Colleges. By A. C. True. Pp. 63-80, pls. 7. Reprinted from Yearbook of Department of Agriculture for 1898.

The types discussed are colleges having only courses in agriculture, colleges with courses in agriculture along with those in mechanic arts and other subjects, and colleges of agriculture forming a part of universities. The chief characteristics of the different types are brought out by descriptions of a number of institutions.

Agricultural Education in the United States. By A. C. True. Pp. 157-190. Reprint from Yearbook of Department of Agriculture for 1899.

This includes an outline of the origin and development of the system of agricultural education in the United States, followed by a general view of the different agencies for education in agriculture in the United States as they existed at the close of the nineteenth century.

Agricultural Education in France. By C. B. Smith. Pp. 115-130. Reprinted from Yearbook of Department of Agriculture for 1900.

A popular description of the French National Department of Agriculture, national schools of agriculture, practical agricultural schools, farm schools, agriculture in the public schools, the duties of departmental and special professors of agriculture, and agricultural experiment stations and laboratories in France.

Some Features of Recent Progress in Agricultural Education. By A. C. True. Pp. 417-459, pls. 2. Reprinted from Annual Report of Office of Experiment Stations for 1902.

This article presents some of the main features of recent advancement in agricultural teaching and methods in this country, including an account of the Graduate School of Agriculture at Columbus, Ohio, July 2, 1902.

Progress in Agricultural Education, 1903. By A. C. True. Pp. 571-634, pls. 24. Reprinted from Annual Report of Office of Experiment Stations for 1903.

This article reviews the work of different agencies in promoting agricultural education in 1903, and includes a report on school gardens in the United States, courses in rural engineering and rural economy, and descriptions of some of the more important buildings erected at agricultural colleges during the year.

Development of the Text-book of Agriculture in North America. By L. H. Bailey. Pp. 689-712. Reprinted from Annual Report of Office of Experiment Stations for 1903.

Comments are made on the principal agricultural text-books which have appeared in the United States, and a complete list of such text-books arranged chronologically, and containing the table of contents in each instance, is appended.

Statistics of Land-grant Colleges and Agricultural Experiment Stations, 1903. By Marie T. Spethmann. Pp. 221-253. Reprinted from Annual Report of Office of Experiment Stations for 1903.

Contains statistics compiled from official reports of the agricultural colleges and experiment stations in the United States.

Agricultural Economics as a Subject of Study in the Agricultural College. By K. L. Butterfield. Pp. 713-718. Reprinted from Annual Report of Office of Experiment Stations for 1903.

The importance of agricultural economics as a subject of study is emphasized, and an outline is given for a short lecture course on this subject.

Instruction in Agriculture in Land-grant Colleges and Schools for Colored Persons. By Dick J. Crosby. Pp. 719-749, pls. 7. Reprinted from Annual Report of Office of Experiment Stations for 1903.

Information on this subject is presented by States, and some general conclusions are drawn in regard to the character of the work and the needs of the institutions. An article on the methods and facilities for instruction at the Hampton Normal and Agricultural Institute, by C. L. Goodrich, is included.

Exhibits at the Louisiana Purchase Exposition. By Walter H. Evans and W. H. Beal. Pp. 687-714, pls. 8. Reprinted from Annual Report of Office of Experiment Stations for 1904.

Descriptions are given of the exhibit of the Office of Experiment Stations in the Government Building and of the exhibit of colleges of agriculture and mechanic arts and experiment stations in the Palace of Education at the Louisiana Purchase Exposition in St. Louis, 1904.

Introduction of Elementary Agriculture into Schools. By A. C. True. Pp. 151-164. Reprinted from Yearbook of Department of Agriculture for 1906.

An account of the growth of interest in the teaching of elementary agriculture in public schools, a review of progress in the formulation of courses in elementary agriculture, the preparation of text-books and manuals, the development of training courses for teachers, the organization of agricultural schools, and the number of pupils studying agriculture. Some suggestions concerning ways in which farmers may help the schools are given.

Agricultural Associations in Belgium. By P. de Vuyst, Assistant Inspector of Agriculture of Belgium. Pp. 3-21. Reprinted from Experiment Station Record, Vol. IX, No. 1.

An account of the organization, objects, and work of the different agricultural associations in Belgium.

Agricultural Education and Research in the Scandinavian Countries and Finland. By F. W. Woll. Pp. 606-616 and 703-719, figs. 4. Reprinted from Experiment Station Record, Vol. IX, Nos. 7 and 8.

Descriptions are given of the various institutions for elementary and higher agricultural instruction in the Scandinavian countries, together with statements regarding the courses of study, daily programmes, and attendance at these institutions, and their cost to their respective governments. A brief discussion of experiment stations in these countries is also included.

Rural Economics as a Subject of Undergraduate Study. Pp. 739-743. Reprinted from Experiment Station Record, Vol. XV, No. 8.

An editorial discussing courses in rural economics in this country and some of the countries in Europe.

The American System of Agricultural Education. By A. C. True and Dick J. Crosby. Doc. No. 706. Pp. 21, pls. 8.

Superseded by Circular No. 83.

[Cir. 93]

FARMERS' INSTITUTES AND EXTENSION WORK.

STAFF.

JOHN HAMILTON, Farmers' Institute Specialist.

J. M. STEDMAN, Assistant Farmers' Institute Specialist.

SCOPE OF WORK.

In its relation with agricultural education extension the Office (1) investigates and reports upon the organization and progress of farmers' institutes in the several States and Territories and in foreign countries; (2) collects data and publishes information and statistics relating to various forms of itinerant instruction in this and in foreign countries, such as movable schools, short courses, and demonstrations; (3) offers suggestions respecting new and improved organization and methods for extension work in all lines of rural life; (4) cooperates with the extension departments of agricultural colleges, with the committee on extension work of the Association of American Agricultural Colleges and Experiment Stations, with the American Association of Farmers' Institute Workers, the state departments of agriculture, and all other state and national organizations for the education of country people on the farms; (5) visits, studies, and gives lectures and advice to educational institutions and organizations regarding extension work; (6) conducts correspondence and prepares, edits, and publishes bulletins, circulars, illustrated lectures, courses of study for movable schools, and charts and lantern slides for use in extension teaching.

PUBLICATIONS OF THE OFFICE ON FARMERS' INSTITUTES AND EXTENSION WORK.

FOR GRATUITOUS DISTRIBUTION.

[Requests for these publications should be sent to the Secretary of Agriculture, or to a Senator or Representative in Congress.]

CIRCULARS.

Circular No. 51 (revised).—List of State Directors of Farmers' Institutes and Institute Lecturers of the United States. By John Hamilton. Pp. 14. 1909.

Circular No. 72.—Report of Committee on Extension Work, 1905-6. Pp. 8.

This is a preliminary report of the Committee on Extension Work of the Association of American Agricultural Colleges and Experiment Stations based on an investigation into the present status of agricultural-extension teaching in the United States.

Circular No. 75.—Report of Committee on Extension Work, 1906–7. Pp. 16.

The second report of the Committee on Extension Work of the Association of American Agricultural Colleges and Experiment Stations. It embodies a compilation of information concerning extension work already undertaken and recommendations by the committee concerning the organization of departments of extension teaching in agriculture.

Circular No. 79.—Form of Organization for Movable Schools of Agriculture. By John Hamilton. Pp. 8.

An outline plan is given for the organization, equipment, and conducting of movable schools of agriculture.

Circular No. 85.—Farmers' Institutes for Women. By John Hamilton. Pp. 16.

A discussion of the importance of farmers' institutes for women is followed by suggestions for organizing such work, including forms of organization for county and state associations, and data concerning the kind of instruction women's institutes should give, and the extent to which women's institute work has been developed in the different States.

SEPARATES.

Farmers' Institutes in the United States. By Dick J. Crosby. Pp. 461–480. Reprinted from Annual Report of Office of Experiment Stations for 1902.

A general survey is given of the institute movement in the United States and of the work and appropriations in each of the different States during the year.

Annual Report of Farmers' Institutes, 1904. By John Hamilton. Pp. 617–675. Reprinted from Annual Report of Office of Experiment Stations for 1904.

An account is given of the national meeting of institute workers and the progress of the institutes, as well as discussions of the needs of the institutes, normal schools for institute workers, and Department aid to institutes. Detailed reports of farmers' institutes in the several States and Territories and statistical data regarding these institutes are included.

Farmers' Institutes in the United States. By John Hamilton. Doc. No. 711. Pp. 20.

A pamphlet prepared for distribution at the Louisiana Purchase Exposition.

The Farmers' Institutes in the United States, 1905. By John Hamilton. Pp. 359–413. Reprinted from Annual Report of Office of Experiment Stations for 1905.

An account is given of the work of the Farmers' Institute Specialist of this Office, of the meeting of the American Association of Farmers' Institute Workers in 1905, and of the progress of the farmers' institutes in the different States and Territories, including statistical data regarding the number of institutes, the attendance, the number of lecturers employed, and the financial support of the institutes.

Form of Organization for Farmers' Institutes. By John Hamilton. Pp. 78–94. Reprinted from Office of Experiment Stations Bulletin 165, Proceedings of the Tenth Annual Meeting of the American Association of Farmers' Institute Workers.

The Farmers' Institutes in the United States, 1906. By John Hamilton. Pp. 301–357. Reprinted from Annual Report of Office of Experiment Stations for 1906.

The Farmers' Institutes in the United States, 1907. By John Hamilton. Pp. 307–354. Reprinted from Annual Report of Office of Experiment Stations for 1907.

The Farmers' Institutes in the United States, 1908. By John Hamilton. Pp. 289-335. Reprinted from Annual Report of Office of Experiment Stations for 1908.

Report of the Farmers' Institute Specialist of this Office for 1908. It includes a discussion of the progress and problems of the institute movement, an account of the annual meeting of the American Association of Farmers' Institute Workers, a discussion of the agricultural-education-extension movement, and detailed reports and statistics on farmers' institutes in the different States and Territories.

LECTURES.

Farmers' Institute Lecture No. 1.—Syllabus of Illustrated Lecture on the Care of Milk. By R. A. Pearson. Pp. 12. 1904.

This syllabus was prepared for the purpose of aiding farmers' institute lecturers in their presentation of this subject before institute audiences. A series of 44 lantern slides has been prepared to illustrate the lecture. References to recent literature on this subject are appended.

Farmers' Institute Lecture No. 2 (revised).—Syllabus of Illustrated Lecture on Potato Diseases and Their Treatment. By F. C. Stewart and H. J. Eustace. Pp. 30. 1907.

In this syllabus mention is made of 47 views illustrating the method of controlling potato diseases. A bibliography of the subject and detailed directions for the preparation and application of the different fungicides are given.

Farmers' Institute Lecture No. 3 (revised).—Syllabus of Illustrated Lecture on Acid Soils. By H. J. Wheeler. Pp. 28. 1907.

This lecture treats of the effect of acidity on nitrogen, phosphorus, and other elements of the soil as related to productiveness, and suggests correctives. Fifty-three slides have been prepared to accompany the lecture. A list of references is appended.

Farmers' Institute Lecture No. 4.—Syllabus of Illustrated Lecture on Profitable Cattle Feeding. By F. B. Mumford. Pp. 21. 1905.

Five factors are discussed as having a bearing on profitable cattle feeding, viz, conformation or type, quality, breeding, age, and methods of feeding. Forty-five lantern slides have been prepared to accompany the lecture. A list of references and a form of score card are appended.

Farmers' Institute Lecture No. 5.—Syllabus of an Illustrated Lecture on Silage and Silo Construction for the South. By Andrew M. Soule. Pp. 31. 1905.

This lecture includes a discussion of the history of silo construction in the United States; the cost and value of silage; silage crops—kinds, culture, and relative feeding value; and construction of silos. Fifty lantern slides accompany the syllabus, which also contains a list of references to literature on silos and silage.

Farmers' Institute Lecture No. 6.—Syllabus of Illustrated Lecture on Essentials of Successful Field Experimentation. By C. E. Thorne. Pp. 24. 1905.

In this syllabus suggestions are offered on the selection of soil, arrangement of plats, preparation of land for crops, planting and cultivation, harvesting, weighing, keeping the records, and continuity of work. Thirty-two slides have been prepared to accompany the lecture. A list of references is appended.

Farmers' Institute Lecture No. 7.—Syllabus of Illustrated Lecture on Roads and Road Building. By the Office of Public Roads. Pp. 16. 1907.

Methods of road construction suitable for country roads and adapted to different sections of the country according to the materials available are given. The syllabus is accompanied by 41 lantern slides illustrating the topic.

Farmers' Institute Lecture No. 8.—Syllabus of Illustrated Lecture on Farm Architecture. By E. T. Wilson. Pp. 20. 1907.

This lecture deals with different styles of farm houses, including a discussion of furnishings for the more important rooms, plumbing, fireplaces, and inclosed porch and back doors; relation of the house to its surroundings; and other structures, such as the dairy, ice house, poultry houses, barns, hog houses, and fences; and the remodeling of houses. Forty-eight lantern slides have been prepared to illustrate the lecture.

Farmers' Institute Lecture No. 9.—Syllabus of Illustrated Lecture on Tobacco Growing. By J. N. Harper. Pp. 15.

The different steps in the production of tobacco from the selection of varieties to the curing of the crop are discussed, and some attention is given to other topics, such as quality, composition, shading, diseases, and insects. Forty-six lantern slides have been prepared to illustrate the lecture.

Farmers' Institute Lecture No. 10.—Syllabus of Illustrated Lecture on the Production and Marketing of Eggs and Fowls. By James Dryden. Pp. 20.

This lecture deals with egg production, housing fowls, feeding fowls, poultry in the orchard, incubation, fattening chickens, marketing product, and insect pests. Forty-four lantern slides have been prepared to illustrate the lecture, and a list of references to poultry literature is given.

BULLETINS FOR SALE OR FOR GRATUITOUS DISTRIBUTION.

[The publications marked with an asterisk (*) can not be furnished from this Office, but may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., by payment of the price given; postage stamps and personal checks are not accepted. The bulletins not marked with the asterisk will be furnished free, so long as they are available, to libraries, educational institutions, the press, State and foreign officials connected with agriculture, exchanges, and such persons as are in active cooperation with the Department or render tangible service in its work. Other persons can obtain them by purchase from the Superintendent of Documents.]

*Bulletin No. 79.—Farmers' Institutes: History and Status in the United States and Canada. By L. H. Bailey. Pp. 34. 1900. Price 5 cents.

This bulletin gives a general survey of farmers' institutes and historical and statistical information regarding the movement in the different States and provinces. A list of officials in charge of farmers' institutes in the United States is included.

Bulletins Nos. 110, 120*, 138*, 154, 165, 182*, 199*, and 213.—Proceedings of the Annual Meetings of the American Association of Farmers' Institute Workers. 1901–1908. Prices Buls. 110, 154, 5 cents each; 120, 138, 213, 10 cents each; 165, 182, 199, 15 cents each.

Minutes and papers of the meetings of the association.

Bulletin No. 135 (revised).—Legislation Relating to Farmers' Institutes in the United States. By John Hamilton. Pp. 35. 1905. Price 5 cents.

Bulletin No. 155.—Agricultural Instruction for Adults in the British Empire. By John Hamilton. Pp. 96. 1905. Price 5 cents.

In this bulletin an account is given of the different features of itinerant instruction for adults in Great Britain, Ireland, Australia, and Canada. In some instances the higher institutions of learning are discussed in their relation to the instruction of adult farmers along agricultural lines.

Bulletin No. 163.—Agricultural Instruction for Adults in Continental Countries. By John Hamilton. Pp. 32. 1905. Price 5 cents.

This bulletin is intended to supplement Bulletin 155 of this Office on Agricultural Instruction for Adults in the British Empire. It includes a discussion of systems of itinerant instruction in agriculture in Austria, Belgium, Bulgaria, Denmark, France, Hungary, Italy, Netherlands, Prussia, Russia, and Sweden, together with notes on some fixed agricultural schools for adults.

Bulletin No. 166. Course in Cheese Making for Movable Schools in Agriculture. By L. L. Van Slyke. Pp. 63. 1906. Price 10 cents.

This is the first of a series of courses designed to give more extended and specific instruction in agriculture outside of regularly organized schools than is now being given in the farmers' institutes. A brief statement concerning the plans for the movable schools is given in a prefatory note by the Farmers' Institute Specialist of this Office. The course outlined in this bulletin consists of 14 lectures accompanied by 14 practicums. The bulletin also contains a list of apparatus needed in giving the course in cheese making and lists of references to the literature of the subject.

Bulletin No. 174.—History of Farmers' Institutes in the United States. By John Hamilton. Pp. 96. 1906. Price 15 cents.

A compilation of historical data concerning Government aid to institutes, the American Association of Farmers' Institute Workers, and the institutes in the several States and Territories.

Bulletin No. 178.—Course in Fruit Growing for Movable Schools of Agriculture. By S. B. Green. Pp. 100. 1907. Price 15 cents.

This is the second bulletin in the series of courses intended to give more extended and specific instruction in agriculture outside of regularly organized schools than is now being given in the farmers' institutes of the country. It includes a syllabus of 15 lectures on different phases of fruit growing, experiment and practice work in connection with each lecture, and an appendix containing references to literature and a list of apparatus and material to be used in the movable schools.

Bulletin No. 200.—Course in Cereal Foods and Their Preparation for Movable Schools of Agriculture. By Margaret J. Mitchell. Pp. 78. 1908. Price 10 cents.

In this bulletin an attempt has been made to reduce instruction concerning cereal foods to pedagogical form. A syllabus of 15 lectures contains information and references to literature on the composition of vegetable foods, and the uses of food compounds in the body, a study of starch, cereals as breakfast foods and as vegetables, bread and bread making, different kinds of flours, foods cooked in deep fat, and foods made from dough raised with eggs.

PUBLICATIONS NO LONGER AVAILABLE.

[These publications have been sent to about 300 libraries in the United States.]

SEPARATES.

The Farmers' Institutes. By John Hamilton. Pp. 149–158. Reprinted from Yearbook of Department of Agriculture for 1903.

This treats in a general way of the development and status of the farmers' institute movement in the United States in 1903.

Farmers' Institutes in the United States. By John Hamilton. Pp. 635–687. Reprinted from Annual Report of Office of Experiment Stations for 1903.

This is a report of the farmers' institutes in the different States and Territories, with summarized statistics and general discussion of the work as a whole.

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